



Faculty of Pharmacy
University of Toronto
Calendar 1977-1978

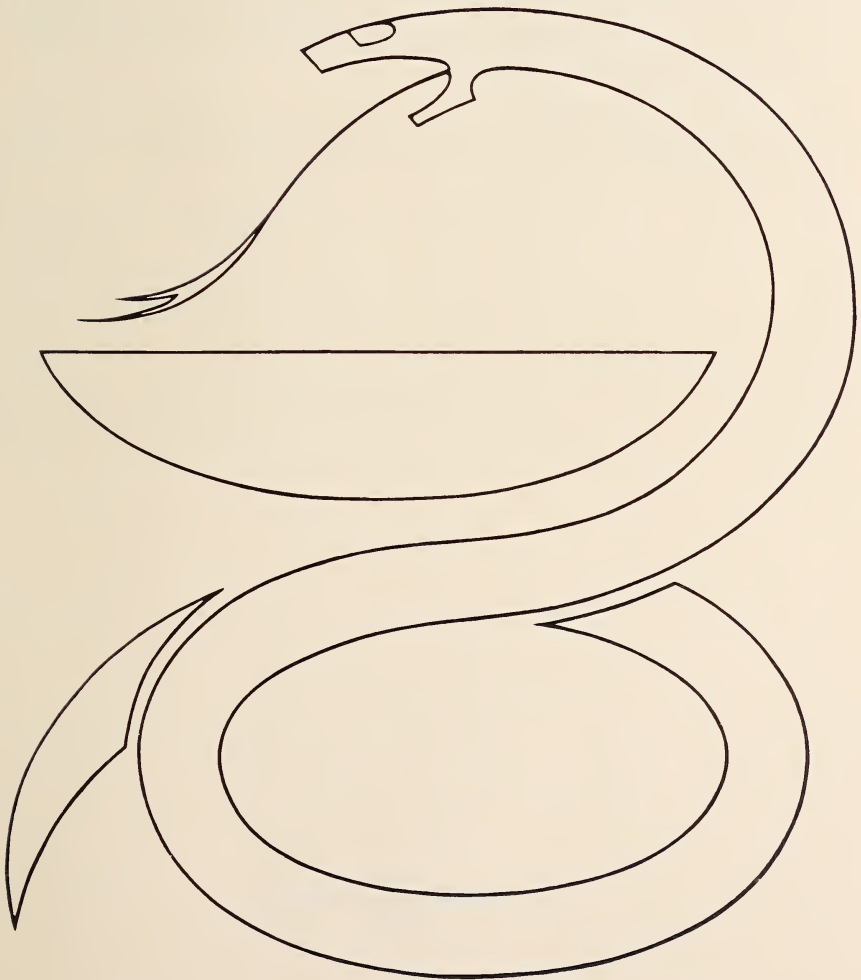


In view of increasing costs of supplies and labour, residence dues and other charges set forth in this calendar are subject to change by the Governing Council.

The curriculum, subjects and regulations herein described are subject to change by the Council of the Faculty.

The illustration on the outside front cover of this calendar shows a contemporary representation of the Bowl of Hygeia, which is gradually becoming the international symbol of pharmacy in the same way that the Staff of Asklepios has for medicine. The Bowl of Hygeia, a bowl with a serpent entwined, traces back to portrayals of the Greek goddess Hygeia, daughter of Asklepios, god of medicine, and his frequent companion on healing missions. A common attribute of the healing deities, the serpent itself has associated with it connotations of healing, immortality, and longevity; the bowl may be interpreted as holding a curative potion. The Bowl of Hygeia forms a predominant part of the official emblem of the Canadian Pharmaceutical Association.

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IMPORTANT NOTICE

1. *Curriculum*

At the time of printing, the courses of instruction described in this calendar are those intended to be offered in the academic year 1977-78. However, it may happen that some courses may require to be changed in content or to be withdrawn. In such cases, the university and the Faculty of Pharmacy will make every effort to provide equivalent alternative instruction, but the provision of such instruction cannot be guaranteed.

2. *Limitation of Enrolment in Courses*

The Faculty of Pharmacy reserves the right to limit the number of registrants in any course of instruction described in this calendar in circumstances where the number of qualified applicants for a course exceed the teaching and other resources available to the Faculty.

3. *Academic and Other Fees*

The university reserves the right to alter the fees and other charges described in this calendar.

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CALENDAR

1977

January	February	March	April
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22 23 24 25 26 27 28	19 20 21 22 23 24 25	17 18 19 20 21 22 23	21 22 23 24 25 26 27
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CALENDAR

1978

January	February	March	April
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May	June	July	August
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September	October	November	December
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24 25 26 27 28 29 30	29 30 31	26 27 28 29 30	24 25 26 27 28 29 30
			31

SCHEDULE OF DATES

FALL TERM, 1977

- April 1 Friday.....Applications for admission must be received by this date.
- July 1 Friday.....Dominion Day. University buildings closed.
- Aug. 1 Monday.....Civic holiday. University buildings closed.
- Sept. 5 Monday.....Labour Day. University buildings closed.
- Sept. 7 Wednesday... Registration in person of all Special Students, at 2 p.m.
- Sept. 8 Thursday.....Registration in person of all First Year students, at
9.30 a.m.
- Sept. 9 Friday.....Registration in person of students as follows:
- | | |
|-------------|-----------|
| Second Year | 9.30 a.m. |
| Third Year | 1.30 p.m. |
| Fourth Year | 3.00 p.m. |
- Sept. 12 Monday.....Lectures and laboratory classes commence at 9.00 a.m.
- Oct. 10 Monday.....Thanksgiving Day. University buildings closed.
- Nov. 11 Friday.....Remembrance Day.
- Dec. 9 Friday.....First term classes end.
- Dec. 12-22.....Examination period.
- Dec. 23 Friday.....Christmas holidays begin.
- Dec. 25 Sunday.....Christmas Day. University buildings closed.

SPRING TERM, 1978

- Jan. 1 Sunday.....New Year's Day. University buildings closed.
- Jan. 3 Tuesday.....Spring Term begins at 9 a.m.
- Feb. 13-17.....Reading week—lecture and laboratory classes will not be held.
- Feb. 15 Wednesday... Last day for withdrawal without academic penalty.
- March 24 Friday.....Good Friday. University buildings closed.
- April 10 Monday.....Last day of classes.
- April 11 Tuesday.....Annual examinations begin.
- May 23 Monday.....Victoria Day. University buildings closed.

OFFICERS OF THE UNIVERSITY 1976-77

<i>Chancellor</i>	Eva W. Mader Macdonald, MD, CM, DPH
<i>President</i>	J. R. Evans, MD, DPhil, FRCP(C)
<i>Special Assistant to the President</i>	J. H. Sword, MA, LLD
<i>Chairman of the Governing Council</i>	Marnie Paikin, BA
<i>Vice-President and Provost</i>	
	D. A. Chant, BA, MA, PhD, FRES, FRSC, FESC, LLD
<i>Vice-Provost</i>	K. J. Dorrington, PhD, DSc
<i>Vice-Provost</i>	M. Israel, BS, MA, PhD
<i>Vice-Provost</i>	R. Ross, MBE, MA
<i>Vice-President, Research and Planning</i>	G. E. Connell, BA, PhD
<i>Assistant Vice-President</i>	G. P. Hiebert, BCom, CA
<i>Vice-President, Business Affairs</i>	A. G. Rankin, BCom, FCA
<i>Vice-President, Internal Affairs</i>	F. Iacobucci, BCom, LLB, DIP INT LAW
<i>University Ombudsman</i>	E. A. McKee, MA
<i>Chief Librarian</i>	R. Blackburn, MA, BLS, MS, LLD
<i>Secretary of the Governing Council</i>	D. S. Claringbold
<i>Director of Admissions</i>	W. Kent, MA
<i>Director of Student Awards</i>	P. S. Phillips, BA, CA
<i>Director of Student Record Services</i>	J. C. Wilson, BAsC, MSc, PhD
<i>Warden of Hart House</i>	J. G. Lengellé, MA, PhD
<i>Coordinator of Campus Services</i>	H. L. Reimer, BA, BPAED
<i>Director of the Advisory Bureau</i>	
	D. J. McCulloch, BA, MD, DPSYCH, FRCP(C)
<i>Director of Athletics</i>	A. J. Fraser, BSc(PE), MA
<i>Director of Career Counselling and Placement Centre</i>	R. Frankle, BA
<i>Director of University Health Service</i>	
	G. E. Wodehouse, MC, MD, FRCP(C), MRCP
<i>Director of Housing Service</i>	S. Mason, BA
<i>Director of International Student Centre</i>	E. Paterson, BA

THE FACULTY OF PHARMACY

<i>Dean</i>	W. E. Alexander, B.S.P., M.SC., PH.D.
<i>Associate Dean</i>	G. C. Walker, B.SC.(PHARM.), M.S., PH.D.
<i>Assistant Dean</i>	E. W. Stieb, B.SC.PHM., M.SC.PHM.(TOR.), PH.D.(WIS.)
<i>Faculty Admissions</i>	
<i>Officer</i>	G. R. Duncan, B.SC.PHM, M.SC.PHM.(TOR.), D.PHIL.(BASEL)
<i>Secretary</i>	Miss H. M. Walton
<i>Librarian</i>	Miss B. A. Gallivan, B.A., B.L.S.
<i>Secretary to the Dean</i>	Mrs. A. Kato

CORRESPONDENCE

Communications relating to standing, curricula, instruction and examinations in the Faculty of Pharmacy are to be addressed to the Faculty of Pharmacy, University of Toronto, Toronto M5S 1A1; communications relating to entrance requirements and admission to the course in pharmacy are to be addressed to the Office of Admissions, 315 Bloor Street West, University of Toronto, Toronto M5S 1A3.

TEACHING STAFF

1976-77

Alexander, W. E., B.S.P.(Sask.), M.SC.(Sask.), PH.D.(Sydney)	
<i>Dean and Professor and Chairman, Graduate Department of Pharmacy</i>	
Hughes, F. N., PHM.B.(TOR.), B.S. IN PHAR.(PURDUE), M.A.(TOR.),	
LL.D.(PURDUE), LL.D.(DALHOUSIE)	<i>Professor Emeritus and Dean Emeritus</i>
Walker, G. C., B.SC.(PHARM.)(ALTA.), M.S., PH.D.(PURDUE)	
<i>Associate Dean and Professor of Pharmacy</i>	
Stieb, E. W., B.SC.PHM., M.SC.PHM.(TOR.), PH.D.(WIS.)	
<i>Assistant Dean and Professor of the History of Pharmacy</i>	
Duncan, G. R., B.SC.PHM., M.SC.PHM.(TOR.), D.PHIL.(BASEL)	
<i>Associate Professor of Pharmaceutical Chemistry,</i>	
<i>and Faculty Admissions Officer</i>	
Fuller, H. J., PHM.B.(TOR.), B.A.(WEST), M.A.(YALE)	
<i>Professor Emeritus of Pharmacy Administration</i>	
Baxter, R. M., PHM.B.(TOR.), B.S.P.(SASK.), M.S., PH.D.(FLA.)	
<i>Professor of Pharmacognosy</i>	
Nairn, J. G., B.SC.PHM.(TOR.), PH.D.(BUFFALO)	<i>Professor of Pharmacy</i>
Paterson, G. R., PHM.B.(TOR.), B.S.P., M.SC.(SASK.), PH.D.(WIS.)	
<i>Professor of Pharmaceutical Chemistry</i>	
Stewart, D. J., B.S.P.(SASK.), M.SC.(ILLINOIS)	<i>Professor of Hospital Pharmacy</i>
Freedman, M. H., B.SC.PHM., M.SC.PHM., PH.D.(TOR.)	
<i>Associate Professor of Biochemistry in Pharmacognosy</i>	
Kandel, S., PH.D.(SZEGED)	<i>Associate Professor of Pharmacognosy</i>

Kennedy, D. R., PHM.B., B.SC.PHM.(TOR.), PH.D.(FLA.)

Associate Professor of Pharmacy

Marshman, Mrs. J. A., B.SC.PHM., PH.D.(TOR.)

Associate Professor in Pharmaceutical Chemistry

Robinson, J. B., B.SC.(PHARM.), M.SC., PH.D.(MANCHESTER), M.P.S.(G.B.)

Associate Professor of Pharmaceutical Chemistry

Segal, H. J., B.SC.PHM.(MAN.), M.S., PH.D.(PURDUE)

Associate Professor in Pharmacy Administration

Sim, S. K., B.SC., M.S., PH.D.(WASH.) *Associate Professor of Pharmacognosy*

Teare, F. W., M.SC.(ALTA.), PH.D.(N.C.)

Associate Professor of Pharmaceutical Chemistry

Spino, M., B.SC.PHM.(TOR.), PHARM.D.(CALIF.)

Visiting Assistant Professor and Special Assistant to Dean, Clinical Pharmacy

Thiessen, J. J., B.SC.(PHARM.) (MAN.), M.SC.(MAN.), PH.D.(CALIF.)

Assistant Professor in Pharmacy

Baun, D. C., B.SC.PHM., M.SC.PHM.(TOR.)

Assistant Professor in Clinical Pharmacy

Borland, Mrs. M. J., M.D., D.P.H. . . *Assistant Professor in Community Health*

Bowen, B. M., B.SC.PHM., M.SC.PHM.(TOR.)

Assistant Professor in Clinical Pharmacy

Mann, J. L., B.SC.PHM., M.SC.PHM.(TOR.)

Assistant Professor in Clinical Pharmacy

Segal, Mrs. R. L., B.S.(CONNECT.), M.S., PH.D.(PURDUE) . . *Assistant Professor*

Smith, Miss D. L., B.S.P.(SASK.), PHARM.D.(CINC.)

Assistant Professor in Clinical Pharmacy

Wensley, W. R., B.SC.PHM., M.SC.PHM.(TOR.) . . . *Lecturer in Pharmacy*

Bowles, E. J., B.SC.PHM. *Instructor in Pharmaceutics*

U, D. K. K., B.SC.PHM., M.SC.PHM. . . *Instructor in Pharmaceutical Chemistry*

Iazzetta, J. J., PHARM.D.(PHIL.COLLEGE.PHM.SCI.) . . *Senior Clinical Instructor*

Naylor, M. J. V., B.SC.PHM.(TOR.), M.SC.(IOWA) . . *Senior Clinical Instructor*

Bartle, W. R., B.SC.PHM.(TOR.), PHARM.D.(SUNY, BUFFALO) *Clinical Instructor*

Kizer, Miss S. E., B.S.(PHARM.), M.SC.(PHARM.) (S. CAROLINA) *Clinical Instructor*

Paton, T. W., B.S.P.(BR. COL.), PHARM.D.(PHIL.) . . . *Clinical Instructor*

Porter, J. K., B.SC.PHM.(TOR.) *Clinical Instructor*

Ricciatti, Miss D. J., B.SC.PHM.(TOR.) *Clinical Instructor*

Taylor, D. W., PHM.B., B.SC.PHM., M.SC.PHM. *Clinical Instructor*

Associate in Continuing Education

B. P. DESROCHES, B.SC.PHM., M.SC.PHM.(TOR.), PH.D.(WISC.)

Associates in Hospital Pharmacy

J. P. Asher, B.SC.PHARM.(WAYNE STATE); P. H. Dawson, B.PHARM. (BRADFORD,

UK); B. A. Dinel, B.SC.PHM.(TOR.), M.SC.(OHIO); O. D. ELVISS, B.S.P.(SASK.);

G. M. Griffin, B.PHARM.(DALHOUSIE); Mrs. C. M. Kolos, B.SC.PHM.(TOR.); Mrs.

A. D. W. S. McGilveray, B.SC.(PHARM.), M.SC.(GLASGOW); W. M. McLean,

B.SC.PHM.(TOR.), PHARM.D.(MICH.); W. J. Tarr, PHM.B.(TOR.); Mrs. D. A.

Thompson, PHM.B.(TOR.)

Clinical Associates

Miss C. M. Anderson, B.SC.PHM.(TOR.); Mrs. M. Andrasko, B.SC.PHM.(TOR.); J. R. Beach, B.SC.PHM.(TOR.); W. D. Cramp, B.SC.PHM.(TOR.); Ms. S. E. Estabrooks, B.SC.PHM.(TOR.); Ms. Y. Hanabusa, B.SC.PHM.(TOR.); Miss E. I. Howie, PH.C.(EDINBURGH); Miss D. I. Johnston, B.SC.PHM.(TOR.); Miss J. J. C. Kanitz, B.SC.PHM.(TOR.); Ms. N. C. MacDonald, B.SC.(PHARM.) (DALHOUSIE); W. Marigold, B.SC.PHM., M.SC.PHM.(TOR.); Mrs. L. S. McCauley, B.SC.PHM.(TOR.); Miss C. K. Ng, B.S.P.(BR.COL.); Mrs. A. Noble, B.PHARM.(ENGLAND); J. A. Pugsley, B.SC.PHM.(TOR.); Mrs. V. Y. Smith, B.SC.PHM.(TOR.); G. Tsallas, B.SC.PHM.(TOR.); W. T. West, B.SC.PHM.(TOR.); Miss K. E. Wichman, B.SC.PHM.(TOR.); T. J. Winkle, B.SC.PHM.(TOR.); Mrs. P. S. Yagi, B.SC.PHM.(TOR.)

Demonstrators

J. R. Ballinger, B.SC.PHM.; C. R. Banfield, B.SC.(WEST INDIES); S. Biderman, B.SC.PHM., M.SC.PHM.; B. J. Billings, B.SC.PHM.; Mrs. E. Bornstein, B.SC.PHM.; A. E. Chaïet, B.SC.PHM., M.SC.PHM.; Mrs. H. M. Chapman, Miss J. A. Ferguson, B.SC.PHM., M.H.A.; Mrs. H. A. Grad, B.SC.PHM.; Mrs. M. R. Holloway, B.SC.PHM., M.SC.PHM.; J. J. Holtzman, B.SC.PHM.; Mrs. E. Janecek, B.SC.PHM.; Mrs. N. Morey, B.SC.(MAN.), PHM.B.; L-H. K. Poon, B.SC.; Miss T. M. Semenuk, B.SC.PHM.; L. M. Shapiro, B.SC.PHM.; G. A. Vecchies, B.SC.PHM.; R. N. Yadav, B.PHARM., M.PHARM.(INDIA); Mrs. H-C. S. Yung, B.PHARM.(OHIO STATE).

Acknowledgement is given to the following departments within the University that give instruction to students registered in the Faculty of Pharmacy: Faculty of Medicine; School of Hygiene; Faculty of Arts and Science; and to those individuals in community pharmaceutical practice, hospital pharmacy practice and in pharmaceutical industry who instruct pharmacy students.

In 1976-77, a number of community pharmacists, hospital pharmacists, pharmaceutical industries and others assisted ably with the Faculty's orientation programme. Sincere thanks are expressed to the following community pharmacists:

J. G. Britton; Mrs. H. S. Decyk; D. F. Durham; R. L. Green; J. P. S. Klimaszewski; D. A. Organ; J. E. P. Rogers; B. M. Semchishin; H. Senders; R. R. Sereda; J. E. Snowdon; J. W. Spence; J. L. Stone; I. C. Whiteside; W. C. Wright.

to the following hospital pharmacists and their staffs:

W. Marigold (Toronto General Hospital); Miss M. H. Simmonds (Toronto Western Hospital); Mrs. P. S. Yagi (Women's College Hospital); Sister Frances Sauve (St. Joseph's Hospital, Toronto); K. Matiko (North York Branson Hospital); Mrs. P. Cravioto (Toronto East General); Dr. W. R. Bartle (Sunnybrook Medical Centre); Mrs. S. Halasi (St. Michael's Hospital); Miss J. Gillespie (York Central Hospital); A. E. Chaïet (North York General Hospital); Dr. J. A. Marshman (Addiction Research Foundation).

and to the following pharmaceutical companies:

Anca Laboratories Ltd., Eli Lilly & Co. Ltd.; Ortho Pharmaceutical (Canada) Ltd.; Sterling Drug, Aurora.

and to:

Dr. B. P. DesRoches and W. R. Wensley, Ontario College of Pharmacists; J. C. Turnbull, Executive Director, Canadian Pharmaceutical Association; Dr. John Evans, President; Mr. A. C. Scales, Stoney Creek Pharmacy Limited; Mr. J. E. P. Rogers, Rogers Pharmacy.

HISTORICAL SKETCH

The Faculty of Pharmacy of the University of Toronto came into being July 1, 1953, when the University assumed responsibility for the school that had been operated by the Ontario College of Pharmacy (now Pharmacists) since 1882, after informal academic experiments tracing back to 1868. A lineal descendant of the Canadian Pharmaceutical Society and its short-lived predecessor, the Toronto Chemists' and Druggists' Association, established in 1867, the Ontario College of Pharmacists remains the provincial regulatory body of pharmacy; it retains vestiges of its educational functions in the practical training of Ontario pharmacy graduates, in its continuing education activities for practicing pharmacists, and in its representation (a reciprocal arrangement) on the Faculty Council.

The evolution of pharmaceutical education in Ontario shows a remarkable growth from a few evenings in 1868 of voluntary classes, with relatively no prerequisites, and with predominant emphasis upon a long, traditional apprenticeship controlled by a professional association, to the present highly sophisticated, compulsory, four-year scientific and professional university course, with high prerequisites, and a nominal, yet meaningful, supervised period of practical training. The change is a significant one, for it represents the maturation of pharmaceutical education in Ontario from the nineteenth-century preoccupation with training for a trade by mastering primarily manual techniques, largely in the shop to meet the current practice situation, to today's stress upon theoretical study embracing generalized principles whose application can, with continuing renewal, serve the future as well as the present needs of the profession.

The initiation of the first baccalaureate programme by the Ontario College of Pharmacy in 1948 served as a natural and necessary prelude to the first graduate programme, towards the M.Sc. degree in pharmacy, launched in 1953, with the University now carrying on the graduate and undergraduate teaching functions. Actually first affiliation of the College with the University had come nearly six decades earlier in 1892, with primarily optional degree privileges being involved, while first control of the University Senate over College examinations did not come until 1927, when certain courses were first taken by pharmacy students in University departments.

Another consequence of University faculty status for pharmacy came with the move of the teaching college to a new building on the University campus in 1963 from facilities it had outgrown at 44-46 Gerrard Street East, facilities which when first opened in 1887 had been the first of their kind in Canada. The physical and symbolic move to the University campus coincided with the first arrangements for a student to earn a Ph.D. degree at the University of Toronto with pharmacy as a major area of research.

Deans, Ontario College of Pharmacy

E. B. Shuttleworth	1882-1891	R. O. Hurst	1937-1952
A. Y. Scott	1891-1892	F. N. Hughes	1952-1953
C. F. Heebner	1892-1937		

Deans, Faculty of Pharmacy

F. N. Hughes 1953-1973

W. E. Alexander 1973-

Associate Deans

G. C. Walker 1970-1977

Assistant Deans

E. W. Stieb 1975-

PHARMACY IN A CHANGING WORLD

Since the dawn of history, Pharmacy has consisted of the art of preparing drugs and medicines for the cure of disease and the alleviation of pain. With the coming of the age of science the art of preparing medicines has become an exact science, to the extent that the various activities, long thought of as the prerogative of the pharmacist, such as collection, identification, preservation, manufacture, analysis and standardization, compounding and dispensing, must now embrace specialization of function or division of labour. Consequently, the pharmacy student specializes in the area of his deepest interest, such as:

General Practice

The activities of the community pharmacist are not limited to compounding and dispensing but include acting as pharmaceutical consultants to physicians, distributing home remedies, sick-room supplies, prescription accessories and related items, and taking an active part in the health needs of the community.

Every day more than a million people go into Canada's 5,000 pharmacies. In more than 600 communities, a single pharmacy is the people's only source of drugs and medical supplies. The pharmacist in general practice should be interested in the promotion of health with a deep sense of service to others.

Hospital Pharmacy

A modern hospital requires a team of specialists to care for patients, provide education, promote community health and further the advancement of scientific medicine. The professional and administrative services provided by the hospital pharmacist make him a vital member of this medical service team.

His professional duties include the dispensing of drugs, the quality control of bulk-compounded and pre-packaged medications, and the preparation of special formulations. He consults with the Pharmacy and Therapeutics Committee of the medical staff on matters pertaining to the acquisition, evaluation and use of drugs. He may also participate in clinical research projects and engage in educational programmes for the medical and nursing staffs.

Administrative services of the hospital pharmacist include the establishment of policies and procedures pertaining to the specifications, purchasing, quality, storage and distribution of pharmaceuticals; the maintenance of proper purchase records; the keeping of perpetual inventories of narcotics and controlled drugs as required by law; the preparation of departmental reports and budgets; and the evaluation of newer drug distribution systems and staffing patterns.

Research and Industrial Pharmacy

The industrial pharmaceutical operation may be considered as being divided into the following separate, and yet interlocking, fields: administration, sales, production, research and quality control.

Every day, research gives rise to new developments and new drugs for use in expanding the armamentarium of the physician in the treatment of disease. The research pharmacist is charged with responsibility for the creation and formulation of dosage forms suitable for administration to the patient, and for ensuring that the medication is available and exerts its therapeutic effect. He is also concerned with the assessment of stability, and the standards and controls associated with the preparations. The pharmacist may also be concerned with investigations involving the isolation and identification of potential new drug constituents from plant, animal and microbiological sources, or with the synthesis of newer medicinal agents.

Quality control is one facet of the pharmaceutical industry in which all personnel are concerned at all times. It embraces the control of the pharmaceutical product at every stage of its passage through the industrial operation; the analytical aspect of the control operation, whether chemical, biological, or microbiological; and the determination and maintenance of standards for the pharmaceutical preparation, and for all the materials, chemicals, containers, closures, packaging, etc., associated with these preparations or dosage forms.

Government Service

The increased role of federal and provincial governments in public health has created additional opportunities for pharmacists in analytical laboratories, in toxicology laboratories, and in administrative positions as government inspectors and health supplies officers. Opportunities exist for pharmacists in Canada's armed forces.

Further Information

More detailed information respecting careers in pharmacy may be obtained from the Registrar, Ontario College of Pharmacists, 483 Huron Street, Toronto M5R 2R4, and from the Guidance Centre, Suite 304, 1000 Yonge St., Toronto. Literature describing pharmacy as a vocation, may be obtained from the Registrar of the Ontario College of Pharmacists.

DEGREES

The degrees offered are:

Bachelor of Science in Pharmacy—B.Sc.Pharm.

Master of Science in Pharmacy—M.Sc.Pharm.

Doctor of Philosophy—Ph.D.

BACHELOR OF SCIENCE IN PHARMACY

The degree of Bachelor of Science in Pharmacy is the degree to which a candidate is admitted upon the completion of the four-year course in Pharmacy. Graduates of this course may, under certain conditions, be granted the licence to practise retail pharmacy in the Province of Ontario. (See section on Licensing.)

GRADUATE DEGREES IN PHARMACY

Graduates who hold the degree of Bachelor of Science in Pharmacy in this University, or equivalent standing, may obtain the degree Master of Science in Pharmacy (M.Sc.Ph.m.) upon the completion of a programme of graduate study approved by the School of Graduate Studies. Individual programmes of study are set out for each candidate making it possible to specialize in one of a wide range of topics such as professional pharmacy, pharmaceuticals, pharmaceutical chemistry, pharmacognosy, molecular pharmacology, and immunochemistry. Studies are also offered leading to the degree of Doctor of Philosophy. A number of appointments as demonstrator are open to graduate students pursuing these programmes. Details respecting these appointments may be obtained from the Dean of the Faculty, or the Chairman of the Graduate Department of the Faculty of Pharmacy. Full information respecting the courses of study and regulations governing the degrees are available from the Secretary, School of Graduate Studies, or the Chairman of the Graduate Department of Pharmacy.

ADMISSION

Full details of the University of Toronto undergraduate admission requirements for 1977 are contained in the Undergraduate Admission Handbook, 1977-78, available on request from the Office of Admissions, University of Toronto, Toronto, Ontario, Canada M5S 1A3, and in all Ontario secondary schools. The 1977 requirements follow.

1. ADMISSION TO THE COURSE LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN PHARMACY

Ontario Grade 13 general requirements:

Entrance to the First Year of the undergraduate courses is offered, depending upon the number of places available, to candidates from Ontario secondary schools who demonstrate good standing, based upon the following evidence:

1. Completion of secondary school studies, including a full programme of academic work at the grade 13 level. Relations and Functions, Calculus, Chemistry and Physics—are required.
2. A recommendation by the secondary school last attended regarding probable success in university studies.
3. A complete academic report for the last three years of secondary school.
4. All applicants for admission to First Year will be required to write the Pharmacy College Admission Test (P.C.A.T.) and to have their scores submitted to the Faculty. Information on the Test is available from the Faculty.
5. In addition, applicants will be asked to complete and forward an information checklist to the Faculty. Evidence will also be requested from three referees of the applicant's choice, regarding suitability for the profession. The applicant may also be invited for a personal interview. The requisite supplementary forms will be sent to each applicant by the Faculty.

The Faculty of Pharmacy, University of Toronto, is the only school of Pharmacy in the Province of Ontario. Enrolment is limited by the number of labora-

tory places available. Accordingly it has not been possible in recent years to admit all qualified applicants. In selecting those to whom places will be offered, all information available for each candidate is considered. Judgement is based primarily upon the academic record of the applicant and the P.C.A.T. score but because this is the only Faculty of Pharmacy in the Province of Ontario, preference is given to Ontario residents and landed immigrants who are Ontario residents. Attention may also be given to the applicant's place of residence in Ontario in order to ensure representation of different sections of the Province in each class. A limited number of places are open to other applicants. Those from developing countries are advised to seek the sponsorship and financial support of the Canadian International Development Agency (CIDA) for their studies in Canada. In order to do this they should apply directly to their own Government for their sponsorship to CIDA.

2. NOTICE TO CANDIDATES OFFERING CERTIFICATES OTHER THAN ONTARIO GRADE 13

Candidates offering certificates other than Ontario Grade 13 should consult the Office of Admissions of the University regarding acceptable course equivalents from other jurisdictions.

3. ENGLISH FACILITY

In addition to meeting the academic requirements outlined above candidates whose mother tongue is not English may be required to meet an appropriate standard in a recognized test of English facility such as the University of Michigan English Language Test, the Certificate of Proficiency in English issued by the Universities of Cambridge or Michigan, or the Test of English as a Foreign Language (T.O.E.F.L.). The University of Toronto is a sponsoring agency for the University of Michigan English Language Test and information about the test is sent to any applicant of whom it will be required.

4. APPLICATION PROCEDURES

Candidates currently in Ontario Grade 13 should apply through their high school using the general application for admission to an Ontario university.

All other candidates should write to the Office of Admissions, giving details of their previous academic work. If, after evaluation a candidate appears eligible for admission consideration, he will receive an official application.

5. NON-MATRICULANTS (*Mature Students*)

For information regarding admission as a non-matriculant please consult the Office of Admissions.

6. FINAL DATE FOR SUBMITTING APPLICATIONS

April 1. If applying for admission to first year not only the application form but all documentation should be in by April 1st. Only in circumstances which the Committee on Admissions deems exceptional will a late application be considered. For further information consult the current Undergraduate Admission Handbook.

7. *ADVANCED STANDING*

A student who has completed one or more years of a suitable science course at a university, and who has obtained at least one grade above the minimum passing grade, may apply for advanced standing in the Second Year. He must meet this University's admission requirements.

A student admitted to advanced standing may be required to complete basic pharmacy subjects of the First Year, in addition to the regular subjects of the Second Year.

SPECIAL STUDENTS

Under certain conditions, and if places are available, students may be admitted to various individual courses. Ordinarily no credit towards the degree will be allowed for work so taken. Preference may be given to hospital pharmacy residents and to approved candidates for registration with the Ontario College of Pharmacists for whom the Ontario College of Pharmacists and/or the Pharmacy Examining Board of Canada has required the completion of specific subjects. Students wishing to undertake such a programme should consult the Dean of the Faculty of Pharmacy.

REGISTRATION

1. Registration will take place in the Faculty of Pharmacy building, 19 Russell Street (south-east corner of Huron and Russell Streets), at the times shown below:

Special Students	Wednesday,	September	7, 1977	2.00 p.m.
First Year	Thursday,	September	8, 1977	9.30 a.m.
Second Year	Friday,	September	9, 1977	9.30 a.m.
Third Year	Friday,	September	9, 1977	1.30 p.m.
Fourth Year	Friday,	September	9, 1977	3.00 p.m.

2. All students should be present promptly at the appointed hour, to attend the opening lecture, to complete enrolment forms, and to receive instructions and timetables.

3. After the opening lecture, each student shall register in person with the Secretary. He shall submit a receipt on the official form or receipted registration copy of the fees form, for at least the first term instalment of fees (See section FEES). A student admitted to First Year or to advanced standing shall present also his statement of admission issued by the Director of Admissions of the University.

4. A student should submit the required documents before a Registration Card can be issued to him.

5. A student who fails to register at the prescribed time is required to pay to the Fees Department, Office of the Comptroller, a late registration fee of \$10 plus \$1 for each day of delay to a maximum of \$20. The Council may at its discretion refuse a student permission to register late.

6. A student who has been in attendance in the Faculty of Pharmacy and who is proceeding to the next higher year will be expected to enrol without

further application. A student who for any reason has decided not to proceed with the course is requested to notify the Secretary.

7. A former student who desires to resume his course after an interval of non-attendance should apply to the Secretary by June 1.

8. A student who wishes to repeat a failed year or who has voluntarily withdrawn from the Faculty and who has not been refused re-admission to the Faculty, shall apply to Council for permission to repeat. A written application should reach the Secretary by July 1. However, a student who has failed in First Year, or a student admitted to advanced standing who has failed in the First Year of his attendance at this Faculty, or a student in either of the latter two categories who has voluntarily withdrawn from the Faculty must apply to the Office of Admissions for re-admission to the University.

FEES

Each undergraduate enrolled in the Faculty of Pharmacy and proceeding to the degree of Bachelor of Science in Pharmacy must pay annual fees to the Office of the Comptroller, Fees Department (*indicating Faculty and student number*) according to the following schedule:

Fees are subject to change at any time by the Governing Council.

The Government of Ontario has recommended an increase in general tuition fees of \$50.00 per term for students enrolled in a full programme. The University has not yet decided its policy in this matter but there is a probability that fees will be increased in 1977-78.

There is a likelihood of increase in tuition fees for students on Student Visas who commence a programme on June 1, 1977, or later. The Government of Ontario has recommended an increase to \$750.00 per term for such students at all Ontario Universities. The University of Toronto has not yet decided its policy in this matter, but it may be that the fees of these students will be set at the level requested by the Government.

Year	Academic Fee	Incidental Fees	Total Fee (if paid in one instalment)	First Instalment due opening day of Academic Yr.	Second Instalment due January 16
1-4 <i>Men</i>	\$590	\$91.50	\$681.50	\$445.50	\$236
<i>Women</i>	\$590	\$81.50	\$671.50	\$435.50	\$236

The Academic Fee includes tuition. The Incidental Fees include the following fees:—Hart House, Students' Administrative Council, Athletic, Health Service, Undergraduate Pharmaceutical Society.

A student who has not paid his total fee at the opening of the session is required to pay the Second Instalment on or before January 16. It is to your advantage to pay your fees in full at the time of registration. If the Deferred Payment Plan is elected, the minimum payment allowed is shown under the heading "First Instalment". The difference between Total Fees and the Initial

Payment is due by January 16, 1978 without further notice, and is subject to a service charge of 1½% compounded monthly commencing September 15th, until the account is paid in full. Students cannot reregister at the University, obtain official transcripts of their marks, nor graduate unless their fees are paid in full.

In order to avoid delay in registration at the opening of each academic year, it is recommended that fees be forwarded by mail prior to the date of registration.

Remit by certified cheque or money order, payable to the University of Toronto, in Canadian Funds, and mail to The Office of the Comptroller, Fees Department, University of Toronto, Toronto, Ontario. M5S 1A2.

Late Registration Fee—Any student who registers after the last date for normal registration in his or her own faculty or school is required to pay a late registration fee of \$10 plus \$1 for each day of delay to a maximum of \$20.

Students who have not paid their fees or residence dues in full or who have outstanding library dues or bookstore accounts by the end of the session will not be permitted further registration in the University, will not have transcripts issued on their behalf, and will not receive their diploma (if in their graduating year) until payment is made.

SPECIAL STUDENTS

Students taking only a few subjects, and not proceeding to a degree, will pay fees according to the following schedule:

Each subject, one term	\$ 57.50
one session (two terms)	115.00
Incidental fee	7.00

OTHER UNIVERSITY FEES

Each student is required to pay to the Office of the Comptroller, Fees Department, at the opening of the session, or as otherwise specified, such of the following fees as may be required of him. (Please indicate Faculty and Student Number on the back of your cheque.)

Special Examination fee, one subject	\$10
Each additional subject	5

Each student who applies to write a special examination must pay this fee.

SUMMARY OF STUDENTS' EXPENSES

The following statement of approximate expenses may give the student a general idea of costs, exclusive of personal expenses:

Fees, see schedule above	
Books, each year	\$175
Board and Lodging, each week	\$ 45 up
Miscellaneous expenses, each week	\$ 12

REGULATIONS AND GENERAL INFORMATION

Attendance and Progress

A student whose attendance at lectures or laboratories, or whose work, is deemed by the Council of the Faculty to be unsatisfactory, may have his registration cancelled at any time by the Council.

Withdrawals or Transfers

A student who wishes to withdraw or to change his course or division in the University should consult the Secretary of the Faculty *immediately*.

Appeals

A student wishing to appeal against a decision of the Faculty Council should consult the Faculty Secretary.

The Faculty is considering setting up a formal "Faculty Appeals Committee" to consider appeals against a decision of Faculty Council. The decisions of a Faculty Appeals Committee would be final and forwarded to Faculty Council for information only. In the interim, such appeals are directed to the Committee on Applications and Memorials which is a standing committee of the Council of the Faculty of Pharmacy.

A student wishing to appeal against a decision of the above should consult The Secretary, Sub-Committee Academic Appeals, Office of the Governing Council.

Student Participation in Laboratory Procedures

At various stages of the teaching programme there are occasions when biochemical, physiological or pharmacological observations are made by the student on himself or on a fellow-student. These exercises include some diagnostic or immunization procedures in common use. Unless some valid reason exists, students are expected to participate in such exercises.

If any investigative work involving student participation does not form part of the teaching programme, participation is entirely voluntary.

Undergraduate Pharmaceutical Society

All undergraduates registered with the Faculty of Pharmacy are members of this organization going under the common name of the U.P.S. Every student pays a fee, as part of his incidental fees, which is dispersed by the U.P.S. in the interest of the student body. Sports, social and educational programmes are funded with the money collected.

For the proper functioning of the U.P.S., all students are encouraged to participate.

Regular Officer Training Plan

Available to Canadian citizens, and tenable in approved degree courses. Four years compulsory service after graduation. Value: Tuition, a book allowance and a monthly living allowance. Apply: Canadian Forces Recruiting Centre, 25 St. Clair Avenue West, Toronto M4V 1K6.

Transcripts of Record

Upon request, transcripts of scholastic records will be forwarded to universities or other institutions of learning.

COLLEGES

With the establishment of New College and Innis College, which are open to students of all faculties, it is now possible for students of the Faculty of Pharmacy to become members of a college. Membership in a college is not obligatory, and application for membership is at the option of the student.

Students entering the First Year will receive application forms for college membership along with their offers of admission to the Faculty. Those interested in college membership should return completed forms with their letters of acceptance.

For information on Colleges please refer to the University of Toronto Undergraduate Admission Handbook available at your Guidance Office.

WELCOME TO UNIVERSITY OF TORONTO

All applicants who are accepted for admission will receive a copy of "Welcome to University of Toronto". This booklet covers information on the Advisory Bureau, Athletics, Career Counselling and Placement Centre, Hart House, Health Service, Housing Service, International Student Centre, Awards and Financial Assistance, University Ombudsman, Academic Discipline, and Discipline in Non-Academic Matters.

CURRICULUM

Key to Course Descriptions

The following terms and symbols are used in the course descriptions which are listed in the Curriculum section of the Calendar:

Course Codes

The first 3 letters indicate the Department of the University responsible for the course: e.g. BIO – Biology.

The 3 figure number indicates in the first figure the year in which the course is taught and the other numbers differentiate various courses within the Department.

The single letter suffix indicates the period over which the course is offered. The suffixes are:

- A – full course offered only in First Term
- B – full course offered only in Second Term
- F – half-course offered only in First Term
- H – half-course given throughout the Academic Session
- S – half-course offered only in Second Term
- Y – full course given throughout the Academic Session

CURRICULUM

Subject	Hours Weekly						Weight
	Fall Term			Spring Term			
	Lec.	Tut.	Prac.	Lec.	Tut.	Prac.	
FIRST YEAR							
(a) BIO110Y	2	½	2½	2	½	2½	24
CHM110Y	2	—	1¾	2	—	1¾	24
(b) MAT130Y	2	2	—	2	2	—	24
PHM102Y—Introduction	3	1	—	3	1	—	28
<i>One of:</i>							
ECO100Y	3	—	—	3	—	—	24
PSY100Y	1	—	3	1	—	3	24
SOC101Y	2	½	—	2	½	—	24
<i>And: One Other Full Course</i>							24
SECOND YEAR							
ANA201Y	2	—	2	2	—	2	24
CHM251F	2	—	3	—	—	—	12
CHM253Y	2	—	3	2	—	3	24
MPL295Y	2	—	2	2	—	2	24
PHM202Y—Prof. Prac. I	1	*	—	1	*	—	0
PHM211Y—Pharmaceut. I	2	—	2	2	—	2	24
PHM227S—Analysis	—	—	—	2	—	2	12
THIRD YEAR							
PAT371S	—	—	—	2	—	—	8
PHM300S—Jurisprudence	—	—	—	1	—	—	4
PHM306Y—Med. Chem. I	1	—	—	5	*	—	24
PHM312Y—Pharmaceutic. II ..	2	—	2	2	—	2	24
PHM381Y—Biochem.	2	—	—	2	—	—	16
PCL361Y	2	—	—	2	—	3	22
PSL360A	4	—	3	—	—	—	22
<i>And One of:</i>							
(c) CHM340Y	2	—	4	2	—	4	24
PHM343F—Dist. Syst.	3	—	—	—	—	—	12
FOURTH YEAR							
<i>Required Courses in Professional and Science Divisions</i>							
CLB403F	2	—	—	—	—	—	8
PHM404Y—Med. Chem. II	3	*	—	3	*	—	24

*A number of tutorial hours may be arranged.

- (a) Students with Grade 13 Biology may take another suitable subject.
- (b) With permission students may elect Mathematics 135Y.
- (c) Students planning graduate studies in pharmaceutical sciences are encouraged to take Chemistry 340Y.

FOURTH YEAR (Continued)

Subject	Hours Weekly						Weight
	Fall Term			Spring Term			
	Lec.	Tut.	Prac.	Lec.	Tut.	Prac.	
PHM416F—C. & D.	2	—	2	—	—	—	12
PHM417Y—Biopharm.	2	—	—	2	—	—	16
PHM418H—Formul.	—	—	1½	—	—	1½	6
PHM451S—History	—	—	—	2	—	—	8
PHM463H—Therapeutics	2	—	—	1	—	—	12

Professional Division, Fourth Year

PHM407S—Seminars	—	—	—	1	—	—	0
PHM465—Clinical	1	1	3	—	—	5	22

And: Course Credits Totalling at least 36 from the following:

PHM375S—[PHM306 Unit E5] ..	—	—	—	1	—	—	4
PHM376S—[PHM306 Unit E6] ..	—	—	—	1	—	—	4
PHM377S—[PHM306 Unit E7] ..	—	—	—	1	—	—	4
PHM378S—[PHM306 Unit E8] ..	—	—	—	1	—	—	4
PHM473F—[PHM404 Unit E13] 1	—	—	—	—	—	—	4
PHM474F—[PHM404 Unit E14] 1	—	—	—	—	—	—	4
PHM475S—[PHM404 Unit E15] —	—	—	—	1	—	—	4
PHM476S—[PHM404 Unit E16] —	—	—	—	1	—	—	4
PHM406F—Animal Plant Health 3	—	—	—	—	—	—	12
PHM408S—Health Econ.	—	—	—	1	—	—	4
PHM409F—Drugs in Self-Med. ..	2	—	—	—	—	—	8
PHM419H—Parenteral Dosage							
Forms and Sterile Prod.	1	—	—	1	—	3	14
PHM445F—Phm. Manag.	1	—	—	—	—	—	4
PHM466F—Drug Inform.							
Services	1	1	—	—	—	—	6
PHM467H—Hosp. Pharm.							
Admin.	1	—	—	—	1	3	12
PHM502F—Radiopharm.	2	*	3	—	—	—	14
PHM528S—Instrmntl. Anal.	—	—	—	2	—	3	14
PHM536F—Microb. Anal.	2	—	2	—	—	—	12
CHL1484H—Public Health 1484 1	—	—	—	2	—	—	12

Science Division, Fourth Year

Two of:

CHM COURSE(S) 222Y, 440F,							
441F, 444S, 445S	2	—	—	2	—	—	24
BCH COURSE(S) 421F, 424S,							
425F, 426S	2	—	—	2	—	—	24
PCL1002Y	2	—	—	2	—	—	24

FOURTH YEAR (Continued)

Subject	Hours Weekly						Weight
	Fall Term			Spring Term			
	Lec.	Tut.	Prac	Lec.	Tut.	Prac.	
<i>In addition, one or more of the following may be elected:</i>							
PHM375S—[PHM306 Unit E5] ..	—	—	—	1	—	—	4
PHM376S—[PHM306 Unit E6] ..	—	—	—	1	—	—	4
PHM377S—[PHM306 Unit E7] ..	—	—	—	1	—	—	4
PHM378S—[PHM306 Unit E8] ..	—	—	—	1	—	—	4
PHM473F—[PHM404 Unit E13]	1	—	—	—	—	—	4
PHM474F—[PHM404 Unit E14]	1	—	—	—	—	—	4
PHM475S—[PHM404 Unit E15]	—	—	—	1	—	—	4
PHM476S—[PHM404 Unit E16]	—	—	—	1	—	—	4
PHM502F—Radiopharm.	2	*	3	—	—	—	14
PHM528S—Instrmntl. Anal.	—	—	—	2	—	3	14
PHM536F—Microb. Anal.	2	—	2	—	—	—	12
BCH COURSE(S), see above	2	—	—	2	—	—	24
CHM COURSE(S), see above	2	—	—	2	—	—	24
MAT225Y, 230Y, 235Y	3	—	—	3	—	—	24
CHL1006Y—Statistical Methods I	2	—	—	2	—	—	24

NOTE: Practical sessions *may* be for longer periods on alternate weeks.

Timetable will limit the choice of elective subjects. In some subjects the number of students will be limited. In some subjects a minimum enrollment will be required. For Third and Fourth years final choice of elective subjects must be made by May 31st.

DESCRIPTION OF COURSES

ANATOMY

ANA201Y

Dr. A. Roberts

General course in gross human anatomy, histology, neuroanatomy and relevant embryology. Two lectures and a two-hour laboratory weekly.

BIOCHEMISTRY

BIO422F—Biochemistry of Membranes

BIO424S—Bio-organic Mechanisms

BIO425F—Biosynthesis of Macromolecules

BIO426S—Structure and Stability of Macromolecules

BIOLOGY

The introductory course, Biology 110, is presented in a manner which differs from most other courses. Course material is divided into two areas: Core Work and Advanced Work. Core units contain basic information and concepts, and

are presented in Multi Media Laboratories which are open approximately 60 hours a week (including evenings). Tutorial-examinations on Core Units will be at a scheduled hour each two weeks. Advanced work consists of self-study material on Biochemistry and Biometrics and a selection from Laboratory Series, Lecture Series and other options. The Laboratory Series present some of the approach and techniques used by descriptive and experimental biologists in 4 three-hour laboratory sessions run at various times throughout the year. The Lecture series are given during some of the scheduled lecture hours, but will also include self-study material. Students will have a choice from different fields of interest presented over the course of the year. The average amount of classroom time is 5 hours per week; this will vary with the options chosen. A complete course description is found in the Biology 110 Manual.

BIO110Y—*The Nature of Living Organisms*

This course deals with the general principles of Biology, the range of the discipline and its relevance to mankind. Living systems are examined at many levels, from the molecular to the ecological. There are opportunities to explore some topics in depth as well as to gain basic knowledge of the concepts and techniques of modern biology.

BIOMETRICS

CHL1006Y—*Statistical Methods I*

Prof. P. N. Corey

An introductory lecture course for students in the biological sciences. The common tests of significance are dealt with in some detail.

CHEMISTRY

CHM110Y—*Basic Chemistry I*

A course in the principles of modern chemistry for students requiring a one or two year sequence in chemistry as a preparation for a career in other areas such as the Health Sciences. Topics covered include principles of atomic structure, chemical bonding and the shapes of molecules, periodicity, the nature of gases, thermochemistry, equilibrium in solution and an introduction to reaction rates and mechanisms.

Chemistry Laboratory—First Year

Taken by all students in CHM 110Y, 3½ hours in alternate weeks. Students taking Chemistry and Physics laboratories should schedule these on the same afternoon of alternate weeks. Emphasis is on the development of basic laboratory skills and techniques through quantitative determinations and instrumental methods. Some choice of experiments is allowed, and wherever possible the experiments attempt to complement the lecture material.

CHM222Y—*Physical chemistry for Life Sciences.*

CHM251F—*Analytical*

Quantitative analysis.

CHM253Y—*Organic Chemistry*

A treatment of the main classes of organic compounds and the relation of their structure to physical, chemical and, in certain instances, physiological properties.

Prerequisite: Chem. 110Y.

CHM340Y—*Organic*

Electronic structure, chemical bonding, stereochemistry, spectroscopy of organic molecules; reactivities and factors affecting equilibria and rates of reaction; mechanisms of addition, elimination, substitution reactions, molecular rearrangements, etc.; applications to syntheses will be explored in both lectures and laboratory. Enrolment limited.

Note: This course is designed primarily for students wishing more organic chemistry than provided in CHM 253Y either as a free option or as co- or prerequisite for courses in other disciplines.

Prerequisite: CHM 253Y and permission of Department.

CHM440F—*Synthetic organic chemistry*

Prerequisite: CHM340Y and permission of Chemistry Department.

CHM441F—*Structural organic chemistry*

Prerequisite: CHM340Y and permission of Chemistry Department.

CHM444S—*Kinetics and mechanism in organic chemistry*

Prerequisite: CHM222Y, 340Y and permission of Chemistry Department.

CHM445S—*Molecular orbital theory in organic chemistry*

Prerequisite: CHM340Y and permission of Chemistry Department.

(CHM222Y is recommended but not required.)

MATHEMATICS

MAT130Y—*Calculus*

Builds on Grade XIII Calculus. Techniques of differentiation and integration. Calculation of limits. Related Rates. Extreme values. Graph Sketching. Applications of integration.

Prerequisite: Grade XIII MAT C

MAT135Y—*Calculus for Scientists*

Builds on Grade XIII Calculus. Extremal problems, application of derivatives, partial derivatives. The Riemann integral, anti-derivatives and the fundamental theorem. Systematic techniques of integration. Sequences, series. Introduction to differential equations.

Prerequisite: Grade XIII MAT R & F and C

MAT225Y—*Linear algebra*

MAT230Y—*Advanced calculus*

MAT235Y—*Advanced calculus for scientists*

MICROBIOLOGY

MPL295Y

Dr. R. Pakula

The course deals with general and systematic microbiology and focuses on those topics which are relevant to the practice of pharmacy. Special attention is given to the following: to sterilization and disinfection, to antibiotics and chemotherapeutic agents, to the more important infectious diseases of man of bacterial, viral and fungal etiology, to immunology and epidemiology of infectious diseases, to hypersensitivity to drugs and to bacterial and other agents, to prevention and treatment of infectious diseases and to microbiology of water and some food products.

The course is given in both terms. Of the 4 hours per week, 2 hours are devoted to lectures and 2 hours to laboratory work.

PATHOLOGY AND CLINICAL BIOCHEMISTRY

PAT371S

Dr. G. W. Gardiner

The course will discuss those aspects of structural pathology relevant to pharmacists. It is intended to provide pharmacists with a better basis for understanding the nature of many common diseases.

CLB403F

Prof. G. Feuer

The course will discuss aspects of the clinical biochemistry of human disease relevant to pharmacists.

PHARMACOLOGY

PCL361Y—*Pharmacology*

Prof. D. Kadar

A course in basic Pharmacology is given. Drugs are classified and discussed with respect to their actions, uses and toxicity. Particular emphasis is paid to the mechanisms of drug action. A series of tutorials and laboratory experiments are offered in which students, in small groups, discuss various aspects of pharmacology with experts in the field.

PCL1002Y—*Pharmacology*

Prof. L. Spero, Prof. W. M. Burnham

Advanced Pharmacology – An advanced survey of basic pharmacological principles designed for graduate students who have successfully completed courses in physiology and pharmacology (Pharmacology 1001/470 or its equivalent).

Weekly lectures given by the Pharmacology Department staff will be supplemented by critical discussions in class of relevant research articles and readings. Entry limited.

PHARMACY

PHM102Y—*Introduction to Pharmacy*

Staff

This course is designed to orient the student to the university, to pharmaceutical education, to the curriculum and to the profession. It will also introduce the student to pharmaceutical and medicinal agents and to dosage forms of drugs. The physico chemical properties of drugs are discussed together with such aspects as the absorption and metabolism of drugs.

PHM202Y—*Professional Practice I*

This course is designed to provide a general introduction to the concepts of health care in Canada and the relationship between the practice of pharmacy and the health needs of society.

PHM211Y—*Pharmaceutics I*

Prof. D. R. Kennedy

A study of the basic principles, processes and techniques applied to pharmaceutical systems including the preparation and use of pharmaceutical dosage forms. The mathematics of pharmacy will be included.

PHM227S—*Quantitative Pharmaceutical Analysis*

*Prof. F. W. Teare,
Prof. J. B. Robinson*

A study of official and non-official quantitative assays of medicinals and pharmaceuticals constitutes this course.

PHM300S—*Jurisprudence*

Prof. D. R. Kennedy

A study of the Acts and Regulations relating to the practice of pharmacy, with particular emphasis on community practice. The pharmacist's responsibility as a professional is considered. Particular emphasis is placed on the Health Disciplines Act and the Pharmacy part thereof.

PHM306Y—*Medicinal Chemistry I*

C1—General Introduction

Prof. J. A. Marshman

C2—Central nervous system drugs I

Prof. J. A. Marshman

C3—Principles of chemotherapy

Prof. R. M. Baxter

C4—Autonomic Drugs I

Prof. J. B. Robinson

E5—Cardiovascular agents

Prof. S. K. Sim

E6—Diuretics, local anaesthetics and antihistamines

Prof. S. Kandel

E7—Central nervous system drugs II

Prof. J. A. Marshman

E8—Antiviral and anti-neoplastic agents

Prof. R. M. Baxter, Prof. G. R. Duncan

All C units are required, any 2 E units are required.

PHM312Y—*Pharmaceutics II*

Prof. J. G. Nairn

This course is concerned with the application of the principles of physical chemistry to pharmaceutical dosage forms, and involves a study of the physico-chemical factors and biopharmaceutical considerations which influence the design and efficacy of pharmaceutical formulations.

PHM343F—*Professional Practice II*

Prof. D. J. Stewart

The course is divided into two sections: A discussion of the pharmaceutical products and services in the community practice setting from the manufacturer to the patient, and an introduction to the role of the pharmacist as a member of the health care team in the provision of health services in the hospital and related health institutions. Emphasis will be placed on the pharmacists' professional responsibility for drug-use-control and its implications for the provision of quality pharmacy care.

A discussion of the structures, functions and transformations occurring within living cells in terms of established chemical principles. The first half deals mainly with structures and functions of the two classes of biopolymers, nucleic acids and proteins. The second half treats metabolism. The action of drugs, when relevant, is interpreted in biochemical terms.

PHM404Y—*Medicinal Chemistry II*

C 9—Narcotic and Non-narcotic analgesics

Prof. S. K. Sim

C10—Antibacterial and antifungal agents

Prof. S. K. Sim

C11—Peptide hormones

Prof. M. H. Freedman

C12—Steroid hormones

Prof. G. R. Duncan

E13—Special Problem

Staff

E14—Mechanisms of action of chemotherapeutic agents

Prof. R. M. Baxter

E15—Selectivity and chemotherapy

Prof. R. M. Baxter

E16—Theories of drug action

Prof. J. B. Robinson

All C units are required, any 2 E units are required.

PHM406F—*Animal and Plant Health*

Staff, O.A.C., O.V.C.

A course of three lectures weekly particularly for the pharmacist who will practise in rural areas. Topics include: veterinary pharmacology, disease of farm animals and poultry, plant diseases and their control, insect control, animal husbandry, soils and fertilizers, and the importance of bacteria in non urban areas.

PHM407S—*Seminars on Professional Practice*

Prof. D. J. Stewart,

A number of practitioners and staff, in a series of seminars, introduce the student to a variety of environments in which pharmacy may be practised.

PHM408S—*Health Economics*Prof. H. J. Segal
and Staff of School of Hygiene

This course is designed to acquaint students with concepts which will help them to develop and evaluate health programmes. A discussion of the concepts and delivery of health care to Canadians, pharmacy's contribution, and the inherent costs is presented.

PHM409F—*Drugs in Self-Medication*

Assoc. Dean G. C. Walker and Staff

The lectures are planned to examine as wide a range as possible of drugs currently available to the Canadian consumer for self-medication.

PHM416F—*Compounding and Dispensing*

Prof. D. R. Kennedy

The student will be given the opportunity to gain both theoretical and practical knowledge regarding therapeutic dosage regimens and the more complex techniques and judgement aspects of prescription practice.

PHM417Y—*Biopharmaceutics and Pharmacokinetics*

Prof. J. J. Thiessen

This course is concerned with the relationships between the physical chemical characteristics of drugs and their dosage forms and the biological processes the drugs undergo in animals. Discussions are based upon the mathematical description of drug data obtained from biological systems using kinetic analyses.

This quantitative description will be used to evaluate data, determine proper dosage regimens, examine drug interactions and the influence of disease states and physiological factors on drug disposition in man.

PHM418H—Formulation Projects

*Dean G. C. Walker, Prof. J. G. Nairn,
Prof. D. C. Baun, Prof. B. M. Bowen,
Prof. F. W. Teare, Prof. J. J. Thiessen*

The student is provided with an opportunity to pursue formulation projects relevant to current pharmaceutical developments and practice in the hospital, community and pharmaceutical industry. The student is afforded an opportunity to research his or her project in the library and/or laboratory and to prepare a written and critical report of his or her observations and findings.

PHM419Y—Parenteral Dosage Forms and Sterile Products

Prof. D. C. Baun, Prof. J. G. Nairn, Prof. G. C. Walker

A study of the principles and techniques required for the preparation and evaluation of large and small volume parenteral products. Emphasis is given to the formulation and preparation of intravenous admixtures, total parenteral nutrition solutions, and other injections prepared in hospital pharmacy.

PHM445F—Pharmacy Management

A discussion of selected socio-economic aspects of administrative, managerial and human factor areas of pharmacy practice.

PHM451S—History of Pharmacy

Prof. E. W. Stieb

Pharmacy's historical development in relation to science and society, with implications for the profession in the present day.

PHM463Y—Selected Topics in Therapeutics *Prof. M. Spino, Dr. W. R. Bartle*

A series of lectures designed to acquaint the student with the patient, the disease and the basic concepts of therapy for a selected number of pathological states; and in so doing provide the student with an appreciation of the physician's and pharmacist's considerations in providing rational drug therapy.

PHM465Y—Orientation to Clinical Pharmacy

*Prof. M. Spino,
Prof. D. J. Stewart*

Instruction and experience in the clinical setting involving hospitalized and ambulatory patients and the application of pharmacological and pharmaceutical principles to patient care.

PHM466F—Drug Information Services

Prof. J. L. Mann

This course is designed to provide an insight into drug literature evaluation and clinical communications by the pharmacist to other members of the health care team. Lecture topics will include primary and secondary literature resources, principles of literature evaluation, information storage, retrieval and dissemination, types and sources of new drug information and related concepts. Tutorial sessions each week will involve an in depth discussion of a number of articles from the clinical literature.

PHM467H—*Hospital Pharmacy Administration* Prof. D. J. Stewart

This course will deal with basic principles of hospital pharmacy administration as they relate to both the managerial role and the professional role of the pharmacist. Laboratory periods will allow students to become involved in administrative projects in hospitals in Metropolitan Toronto. Tutorial periods will permit oral presentation and discussion of administrative projects.

PHM375S—*Medicinal Chemistry* [PHM306 Unit E5] Prof. S. K. Sim

PHM376S—*Medicinal Chemistry* [PHM306 Unit E6] Prof. S. Kandel

PHM377S—*Medicinal Chemistry* [PHM306 Unit E7] Prof. J. A. Marshman

PHM378S—*Medicinal Chemistry* [PHM306 Unit E8] Prof. R. M. Baxter,
Prof. G. R. Duncan

PHM473F—*Medicinal Chemistry* [PHM404 Unit E13] Staff

PHM474F—*Medicinal Chemistry* [PHM404 Unit E14] Prof. R. M. Baxter

PHM475S—*Medicinal Chemistry* [PHM404 Unit E15] Prof. R. M. Baxter

PHM476S—*Medicinal Chemistry* [PHM404 Unit E16] Prof. J. B. Robinson

PHM502F—*Introduction to Radiopharmaceuticals* Prof. F. W. Teare,
Prof. S. I. Kandel, Prof. B. M. Bowen

An introductory course dealing with the safe handling of radioactive isotopes, their pharmaceutical applications, and the receiving, assaying, use and control of selected radiopharmaceuticals and instrumentation.

PHM528S—*Instrumental Analysis* Prof. F. W. Teare

This course deals with absorption spectrophotometry (UV-IR), fluorometry, gas liquid chromatography, polarography, amperometric titrimetry and certain other instrumental methods. Isolation of drugs and/or metabolites, etc. from dosage forms and biological materials prior to their measurement will be dealt with in laboratory exercises.

PHM536F—*Microbial Methods of Analysis* Prof. R. M. Baxter

A selected topics course designed to acquaint the student with the theory and practical aspects of microbiological assays and their application, and the use of such procedures for the evaluation of quality assurance and in the interpretation of assay results in terms of resistant or non-resistant.

PHYSIOLOGY

PSL360A—*Human Physiology* Prof. O. Sirek

A course on the functions of the blood, circulation, respiration, muscle, central nervous system, the senses, gastrointestinal tract, kidney and organs of reproduction.

POLITICAL ECONOMY

ECO100Y—*Introduction to Economics*

An introductory analysis of contemporary economic institutions and problems: the theory of production and employment; the role of money and the banking system; governmental monetary and fiscal policy; price determination and the role of competition; foreign exchange rates and international trade and finance; and comparative economic systems.

PSYCHOLOGY

PSY100Y

The course is designed to familiarize students with important concepts in various areas of contemporary Psychology. It involves a variety of instructional and learning techniques, including lectures, audio-visual instruction, and self-study.

PUBLIC HEALTH

CHL1484H—*Current Concepts*

Dr. Joan Borland

A lecture course of approximately 45 hours for students in the Faculty of Pharmacy. Emphasis is placed on the epidemiological approach to current public health problems and the interprofessional relationships involved in their control.

SOCIOLOGY

SOC101Y—*Introduction to Sociology*

The basic principles and methods of sociology as applied to the study of human societies, focusing on the social sources of differing values and conceptions of reality, and the influence of these on such phenomena as the behaviour of individuals, patterns of relations among groups, and social stability and change.

UNIVERSITY OF TORONTO

FACULTY OF PHARMACY

EXAMINATIONS

General

Students should be assured that every possible consideration is given toward their success within the framework of the regulations printed hereafter. Students should become thoroughly familiar with these regulations as they may apply to their own situation and should observe especially the procedures for petitioning where the need arises.

The academic results for each year are reviewed by a board of examiners made up of all the instructors for the courses in that particular year. The recommendations from each of the boards of examiners are reviewed in turn by a committee on examinations of the Faculty Council, and finally by the Council itself. Representation on these various bodies includes members from inside the Faculty and from outside departments, undergraduate and graduate students,

alumni, and the Ontario College of Pharmacists. Taken together, this ensures as equitable a process as possible, given due appreciation by the students themselves of their own strengths and weaknesses.

Petitions

1. Petitions for special consideration on account of illness or other circumstances which occur immediately preceding or during the examinations must be filed with the Secretary of the Faculty before the close of the examinations. In case of illness a physician's certificate must be submitted before the petition may be considered, and must state that the student was examined at the time of the illness.

Grades, Weighted Averages, and Promotions

2. The total marks assigned to the year, and standing in class, will be determined by a weighted average. Subjects will be weighted according to the number of hours devoted to them, the hours assigned to laboratory subjects, tutorials and seminars being given one half the weight of those in lecture subjects.

Grades

Individual Subjects	Percentage	Class (Based on Weighted Averages)
A	80%–100%	I
B	70%– 79%	II
C	60%– 69%	III
D	50%– 59%	—
E	Below 50%	—
Overall Weighted Average Below 60% (all subjects)		Fail

3. Promotion to the next higher year will be granted to a student who obtains a weighted average of 60% or greater, and does not obtain less than 50% in more than one subject at the annual examinations. A student who obtains the required average but who obtains a mark below 40% in one course must normally repeat the work of that subject and obtain a mark of at least 50%.

4. A regular student may not proceed to Third Year until he has fulfilled all the requirements of the First Year. A student may not proceed to Fourth Year until he has fulfilled the requirements of all previous years.

5. A student admitted to advanced standing in Second Year may not proceed to Third Year until he has successfully completed the work of the First Year including any prescribed conditions and, in addition, has met the Second Year requirements as stated in relevant sections of these Regulations

General Regulations

6. A student who is required to repeat a subject or subjects must meet the requirements of each professor concerned respecting attendance, tests and assignments.

7. A student who receives permission to repeat a failed year must repeat the entire work of the year including all examinations.

8. A student who wishes to repeat a failed year or who has voluntarily withdrawn from the Faculty and who has not been refused re-admission to the Faculty, shall apply to Council for permission to repeat. A written application should reach the Secretary by July 1. However, a student who has failed in First Year, or a student admitted to advanced standing who has failed in the First Year of his attendance at this Faculty, or a student in either of the latter two categories who has voluntarily withdrawn from the Faculty must apply to the Office of Admissions for re-admission to the University.

9. Penalties for Unsatisfactory Work by Students

For unsatisfactory work the Council may:

(a) Refuse re-admission to, or further registration in, the Faculty to any student who on *two* occasions fails to secure the right to advance to a higher year in the Faculty.

(b) Suspend a student from registration in the Faculty for a given period of time not exceeding two years and/or until the satisfaction of other conditions as it may see fit. Upon satisfying the conditions of the suspension, the student shall be eligible for consideration to re-register in the Faculty.

(c) Any student who withdraws after February 15, or who does not withdraw but does not write the annual examinations, will be regarded for the purposes of these regulations as having failed his year.

Definition of Terms

- (i) *Refused re-admission to the faculty.* This term is applied to a student whom the Council has decided is to be refused permission to register again in the faculty (i.e. the student is required to withdraw from the faculty and he may not re-enrol).
- (ii) *Suspended from regular attendance.* This term is applied to a student whom the Council has decided will not be permitted to continue in his course unless and until he has fulfilled certain specified conditions. The decision of suspension will include the conditions whether of a lapse of a stated period of time or the completion of specified work, or both, or other conditions, which if satisfactorily met will entitle the student to apply for re-enrolment or readmission.

SCHOLARSHIPS, AWARDS AND BURSARIES

As the value of endowed scholarship or prize is dependent on the actual income of the fund, it is possible that the value of certain scholarships and prizes at the time of payment may be less than the amount stated in the calendar.

In those cases where the amount of the award is not payable from income earned on an endowed fund, payment will be dependent on the receipt of the amount of the annual award from the donor.

Where an application is required an asterisk(*) is shown beside the name. Consult the following pages for details.

Ontario Students

Admission scholarships and bursaries are awarded by the University, the Provincial Government and other interested bodies. Complete information

about conditions and application procedure is available in Guidance Departments of all Secondary Schools early in February.

Non-Ontario Students

All non-Ontario students should apply to the Office of Student Awards, Simcoe Hall, University of Toronto. A limited number of scholarships are reserved for students living outside the Province of Ontario, but as competition is keen such students must not count on receiving assistance but are advised rather to ensure that they have sufficient funds from their own government or from private sources to cover all probable expenses.

Entering First Year

- *War Memorial Matriculation Scholarship
- *The Tamblyn Scholarship
- *Rokeah Centennial Scholarships
- *Rho Pi Phi Bursary
- *Brant Pharmacists' Association Bursary
- *Essex County Pharmacists' Association Bursary
- *Hamilton Ladies' Auxiliary Bursary
- *London Pharmacists' Association Scholarship
- *Niagara Falls Pharmacists' Association Bursary

First Year

- Burroughs Wellcome Scholarship
- Kent Drugs Limited Scholarship
- Horace David McCord Memorial Scholarship
- George I. Puro Memorial Award
- Rho Pi Phi Ladies' Auxiliary Prize
- Rokeah Centennial Scholarships
- *Thunder Bay Pharmaceutical Association Bursary

Second Year

- Evans Medal in Pharmaceutical Chemistry
- Noxzema—J. Marvin Shaw Scholarship
- Kent Drugs Limited Scholarship
- Upjohn Scholarship
- Charles E. Frosst Scholarship
- Horace David McCord Memorial Scholarship
- The Max Kassel Memorial Scholarship
- The Corbett Scholarship
- Senelnick Prize
- Meeker Memorial Book Prize

Third Year

- Lieut. Geo. R. Parke, Phm.B., Scholarship
- John H. H. Jury Scholarship
- Ed. Mirvish Centennial Scholarship in Pharmacy

Undergraduate Pharmaceutical Society Award
Kent Drugs Limited Scholarship
E. A. Lovell Scholarship
The Drug Trading Company Limited Awards
The William A. Munro Award
Centennial Pharmacy Scholarship
Horace David McCord Memorial Scholarship
Merck Sharp and Dohme Canada Limited Scholarship
Bristol Prize

Fourth Year

John Roberts Scholarship and Medal
D'Avignon Medal
Major F. A. Tilston, V.C., Scholarship
Frank W. Horner Gold Medal
Harold G. Browne Prize
*Pfizer Fellowship
*Kent Drugs Limited Scholarship
Leon Koffler Memorial Scholarship
Koffler Stores Limited Scholarship
Koffler Stores Limited Scholarship in Pharmaceutics
I.C.N.-Canada Award
E. E. Binder Memorial Prize
E. L. Woods Memorial Prize
Aubrey A. Brown Memorial Award

Graduate Studies

*Warner-Lambert Research Fellowship
*The Novopharm Ltd. Graduate Award in Pharmacy

Bursaries

*Ontario Student Assistance Program
*Edwin H. Nelson Memorial Award
*Anna M. Pearson Memorial Bequest
Lambton Pharmacists' Association Bursary
*Atkinson Incourse Bursaries
*Procter and Gamble Bursary Plan
*Family Bursary Fund
*I.B.M.—Thomas J. Watson Memorial Bursary
*Birks Family Foundation Bursaries
*Ubukata Fund for Japanese Students
*Khaki University and Y.M.C.A. Memorial Scholarships
*Patricia Hamilton Bursaries
*Mabel Melissa Johnston Bursaries

ADMISSION AWARDS

War Memorial Matriculation Scholarship

A gift of the graduates of the Ontario College of Pharmacy, this scholarship is awarded to the applicant ranking highest in First Class Honours in Grade 13.

Value: During each of the four undergraduate years: \$50 cash, plus the total academic fee, provided First Class Honours is maintained.

Apply on the regular University Admission Scholarship Application form, available at secondary schools.

The Tamblyn Scholarship

This is a gift of G. Tamblyn, Limited, offered to the student who obtains the highest average percentage in Grade 13, and who has not won an admission award of greater or potentially greater value.

Value: \$500.

Apply on the regular University Admission Scholarship Application form, available at secondary schools.

Rokeah Centennial Scholarships

To celebrate Canada's Centennial, Rokeah Chapter, Rho Pi Phi Pharmaceutical Fraternity, presents annually two scholarships to students entering First year, on the basis of academic proficiency.

Value: \$250 each

Apply on the regular University Admission Scholarship Application form, available at secondary schools.

Rho Pi Phi Bursary

A gift of Rho Pi Phi Fraternity, this bursary is awarded on the basis of financial need and satisfactory academic standing at the Ontario Grade 13 examinations.

Value: \$200.

Essex County Pharmacists' Association Bursary

The Essex County Pharmacist's Association offers bursaries to students from high schools in Essex County in all four years of the course.

Value: \$150 each.

Apply: To the Secretary of the Association.

Hamilton Ladies' Auxiliary Bursary

The Ladies Auxiliary to the Hamilton Pharmaceutical Association offers a bursary to a candidate from a Secondary School in the Hamilton area, on the basis of financial need and academic standing.

Value: \$150.

London Pharmacists' Association Scholarship

The gift of the London Pharmacists' Association, this scholarship is awarded to a student from a secondary school in the London area.

Value: \$250.

Apply: To the Secretary of the Association.

Niagara Falls Pharmacists' Association Bursary

The Niagara Falls Pharmacists' Association offers a bursary to a student from one of the Niagara Falls Secondary Schools.

Value: \$100.

Apply: To the Principal of the Secondary School.

FIRST YEAR

Burroughs Wellcome & Co. Scholarship

The Burroughs Wellcome & Co. (Canada) Ltd. provides a scholarship to be awarded to a student who obtains at least First Class Honours at the annual examinations of the First Year, and who enrolls in Second Year.

Value: \$250.

Kent Drugs Limited Scholarship

The Kent Drugs Limited Scholarship is awarded to a student who obtains the highest standing in First Class Honours at the annual examinations of the First Year and who has not won an award of greater value. Financial need may be considered.

Value: \$250.

Horace David McCord Memorial Scholarship

The Horace David McCord Memorial Scholarship, administered by the Ontario College of Pharmacists, was given by the late Horace David McCord toward the tuition fees of a student of Canadian birth, of special ability and of high character. Preference will be given to a student from the Ottawa Valley.

Rokeah Centennial Scholarships

Rokeah Chapter, Rho Pi Phi Pharmaceutical Fraternity, presents annually two scholarships to students finishing First year, on the basis of academic proficiency.

Value: \$250 each

George I. Puro Memorial Award

The George I. Puro Memorial Award is awarded to the student who obtains at least Second Class Honours at the annual examinations of the First Year, and who ranks highest (with at least 75 per cent) in the subject of Pharmacy 102.

Value: \$25 cash and a silver medal.

Rho Pi Phi Ladies' Auxiliary Prize

The Ladies' Auxiliary to Rho Pi Phi pharmaceutical fraternity presents a copy of *Remington's Pharmaceutical Sciences* to the woman student who stands highest at the annual examinations of the First Year and who has won no other award.

SECOND YEAR

Noxzema—J. Marvin Shaw Scholarship

The Noxzema Chemical Company of Canada Limited provides a scholarship to be awarded normally to the student who stands first in First Class Honours at the annual examinations of the Second Year, but financial need may be considered.

Value: Approximately \$500.

Evans Medal in Pharmaceutical Chemistry

In memory of Professor George A. Evans, Dr. Beverley Britt presents a gold medal to be awarded to the student who obtains the highest standing in Pharmaceutical Chemistry (Pharmacy 227) in the Second Year.

The Corbett Scholarship

The late H. Milton Corbett established The Corbett Scholarship in the amount of the income on \$5,000. It is to be awarded to a student who obtains First Class Honour standing in the examinations of the Second Year and who has not received an award of greater value. Financial need and leadership qualities may be considered.

Value: Approximately \$300.

Kent Drugs Limited Scholarship

The Kent Drugs Limited Scholarship is awarded to a student who obtains the highest standing in First Class Honours at the annual examinations of the Second Year and who has not won an award of greater value. Financial need may be considered.

Value: \$250.

Charles E. Frosst Scholarship

The Charles E. Frosst Scholarship is awarded to a student who obtains First Class Honours at the examinations of the Second Year and who has not received an award of greater value. Financial need and leadership qualities may be considered.

Value: \$250, and a bronze medal.

The Upjohn Company of Canada Scholarship

The Upjohn Company of Canada Scholarship is awarded on the basis of academic standing obtained at the annual examinations of the Second Year.

Value: \$200.

Horace David McCord Memorial Scholarship

The Horace David McCord Memorial Scholarship, administered by the Ontario College of Pharmacists, was given by the late Horace David McCord toward the tuition fees of a student of Canadian birth, of special ability and of high character. Preference will be given to a student from the Ottawa Valley.

The Max Kassel Memorial Scholarship

The Friends of the late Mr. Max Kassel have established The Max Kassel Memorial Scholarship in the amount of the income on \$2,000. The scholarship is to be awarded to a student from those obtaining First Class Honours in the examinations of the Second Year and who has not received an award of greater value.

Value: Approximately \$125.

Senelnick Prize

Nu Chapter of Rho Pi Phi Fraternity established the "Joseph Senelnick Rho Pi Phi Memorial Prize," to be awarded to the student who obtains the highest

marks in subjects in the department of pharmacy in the first two years of the course (Pharmacy 102, 211).

Value: \$35.

William Stanley Meeker Memorial Book Prize

In memory of Mr. William Stanley Meeker, who practised community pharmacy during his lifetime, a capital donation was made by Mrs. Edith Meeker, Professor Josephine P. Meeker, and others. The annual income, for the purchase of text books, will be awarded to the student who attains the highest mark in first class honours in the subject Pharmaceutical Preparations (Pharmacy 211) and who obtains at least second class honour standing in Second Year.

Value: Interest on the capital.

THIRD YEAR

Parke Scholarship and Medal

A gold medal in memory of the late Lieut. Geo. R. Parke, Phm.B. (Class of 1910-11), will be awarded to the student who stands first in First Class Honours at the annual examinations of the Third Year.

John H. H. Jury Scholarship

A bequest by the late Mr. J. H. H. Jury, Bowmanville, was made to establish a scholarship in the amount of the income on \$2,000. The award is made to a student of the Third Year on the basis of academic standing in the annual examinations. Evidence of financial need may be considered.

The Ed Mirvish Centennial Scholarship in Pharmacy

This scholarship, presented by Honest Ed's Pharmacy Limited, will be awarded to the student who stands highest in First Class Honours at the examinations of Third Year and who has not won an award of greater value. Value: \$550.

The E. A. Lovell Scholarship in Pharmacy

The family of the late Mr. E. A. Lovell, Phm.B., Oshawa, provided this scholarship for award to a student who obtains First Class Honours at the annual examinations of the Third Year, has not won an award of greater value, and elects the professional options of the Fourth.

Value: Approximately \$500.

The Centennial Pharmacy Scholarship

This scholarship, given jointly by the Canadian Pharmaceutical Association, Koffler Stores Limited and the Ontario College of Pharmacists enables a Third Year student to join with students from other Faculties of Pharmacy in Canada in attending the Annual Meeting of the Canadian Pharmaceutical Association and in visiting the Food and Drug Directorate and other governmental, industrial and academic institutions of interest to pharmacy. The award will be based on academic ability and contribution to undergraduate life of the Faculty.

Undergraduate Pharmaceutical Society Award

The Undergraduate Pharmaceutical Society presents an award to a student who obtains at least Second Class Honours at the annual examinations of the Third Year and who has made a significant contribution to the undergraduate life of this Faculty.

Value: \$100.

Kent Drugs Limited Scholarship

The Kent Drugs Limited Scholarship is awarded to a student who obtains the highest standing in First Class Honours at the annual examinations of the Third Year, who has not won an award of greater value, and who elects the professional division for Fourth Year. Financial need may be considered.

Value: \$250.

The Drug Trading Company Limited Awards

The Drug Trading Company Limited, Toronto, provides two awards of \$250 each to two students who obtain at least Second Class Honours at the examinations of the Third Year, and who elect to take the professional division of the Fourth Year.

Value: \$500.

The William A. Munro Award

Louise Munro Foley and sons, Donald and William present an annual Award to a student in Third Year. The award is offered to honour Mr. W. A. Munro, for many years a pharmacist in Glencoe, Ontario. In making the award Council will consider academic achievement and financial need.

Value: \$50.

Horace David McCord Memorial Scholarship

The Horace David McCord Memorial Scholarship, administered by the Ontario College of Pharmacists, was given by the late Horace David McCord toward the tuition fees of a student of Canadian birth, of special ability and of high character. Preference will be given to a student from the Ottawa Valley.

Merck Sharp & Dohme Canada Limited Scholarship

Merck Sharp & Dohme Canada Limited has established an award of \$250 plus a copy of The Merck Index and The Merck Manual to a student who obtains at least second class honours in the examinations of the Third Year and who has not won an award of equal or greater value.

Value: \$250.

Bristol Prize

Bristol Laboratories of Canada, Limited, presents a copy of Goodman and Gilman—*The Pharmacological Basis of Therapeutics* to the student who obtains the highest standing at the annual examinations of the Third Year, and who has won no other award.

FOURTH YEAR

John Roberts Scholarship and Medal

The John Roberts Scholarship and Medal is awarded to the student obtaining the highest total marks, in First Class Honours, at the annual examinations of the Fourth Year.

Value: Approximately \$125.

D'Avignon Medal

The D'Avignon Medal is presented by the Ontario College of Pharmacists to the student who obtains the highest standing (at least 80 per cent) in Pharmacy 416, and who also obtains at least Second Class Honours at the annual examinations.

Value: Gold Medal.

Major F. A. Tilston, V.C., Scholarship

The graduating class of 1929 established an annual award in honour of Major F. A. Tilston, V.C., a member of the class. The award is made to the student who obtains the highest total in First Class Honours in all subjects of the department of pharmacy (Pharmacy 102, 211, 312, 416, 417, 418) in all years of the course, and who has not won any award of greater value at the examinations of the Fourth Year.

Value: Approximately \$50, and a silver medal.

Frank W. Horner Gold Medal

The Frank W. Horner Medal in Pharmacy is awarded to a student in hospital pharmacy administration (professional division) who obtains an average of at least 70 per cent at the annual examinations, and who obtains the highest mark (not less than 80 per cent) in the subject of Hospital Pharmacy Administration (Pharmacy PHM467).

Harold G. Browne Prize

The Harold G. Browne prize is awarded to the student who obtains at least 70 per cent at the annual examinations of the Fourth Year, who ranks highest (with at least 80 per cent) in the subject of Retail Pharmacy Management (Pharmacy 445), and who has not won an award of greater value.

Value: Approximately \$50.

Pfizer Fellowship in Pharmacy

A Fellowship of \$500 is offered by Pfizer Canada to a candidate who obtains at least Second Class Honours at the annual examinations, and who undertakes to pursue a programme of advanced studies in pharmacy. Preference is given to a candidate who undertakes an approved programme in Hospital Pharmacy.

Apply: To the Secretary of the Faculty before May 1.

I.C.N.-Canada Award in Hospital Pharmacy

I.C.N.-Canada presents \$250 and a medal annually to a member of the graduating class who has taken the hospital pharmacy options (professional

division) and who subsequently enrolls in a hospital pharmacy residency programme in Ontario. The selection will be made on the basis of the following criteria: academic standing, finances, hospital experience and interest in the field, and personal qualities.

Value: \$250 and a medal.

Kent Drugs Limited Scholarship

The Kent Drugs Limited Scholarship is awarded to a student who obtains First Class Honours at the annual examinations of the Fourth Year, who has not won an award of greater value. Preference shall be given to a student who enrolls in the Graduate Department of Pharmacy of the School of Graduate Studies.

Value: \$250.

Apply: To the Secretary of the Faculty before May 1.

Leon Koffler Memorial Scholarship

In memory of Mr. Leon Koffler, Koffler Stores Limited presents a scholarship to a student standing highest in First Class Honours in the professional division, who has won no award of equal or greater value. Preference will be given to a student planning to practise community pharmacy.

Value: \$250.

Koffler Stores Limited Scholarship

Koffler Stores Limited presents a scholarship to a student standing second highest in First Class Honours in the professional division, who has won no award of equal or greater value. Preference will be given to a student planning to practise community pharmacy.

Value: \$200.

Koffler Stores Limited Scholarship in Pharmaceutics

Koffler Stores Limited offers scholarships of \$250 and \$200 to the students standing respectively first and second in Pharmaceutics III (or in the course which includes dispensing), who obtain First Class Honours in this subject and at least Second Class Honours in the Fourth Year examinations, and who have not won an award of equal or greater value.

E. E. Binder Memorial Prize

A prize of \$50, presented by Mrs. E. E. Binder, is awarded to the student obtaining the highest standing (First Class Honours) in Medicinal Chemistry (Pharmacy 306 and 404), and at least Second Class Honours in the examinations of the Fourth Year.

E. L. Woods Memorial Prize

The Canadian Foundation for the Advancement of Pharmacy has established the E. L. Woods Memorial Prize for the thesis adjudged best of those submitted on an experimental problem by senior undergraduate students of Canadian Schools of Pharmacy. The award consists of a prize of \$100, a gold medal, a certificate, and expenses to the Convention of the Canadian Pharmaceutical Association, at which the winner will present a summary of his thesis.

Aubrey A. Brown Memorial Award

Awarded by the Canadian Foundation for the Advancement of Pharmacy to the student in the graduating class of a Canadian school of Pharmacy who submits the best thesis of the library, archives and/or survey type, on some phase of Pharmacy Administration, Pharmaceutical History, particularly Canadian, or any topic having some clear connection with the practice of retail or hospital pharmacy. The award consists of a prize of \$100, a gold medal, and the payment of expenses to a pharmaceutical convention in the province where the winner resides.

GRADUATE STUDENTS

(See School of Graduate Studies calendar for other awards)

Warner-Lambert Research Fellowship in Pharmacy

A research fellowship in pharmacy, to the value of \$1,500 annually, of which \$1,200 is for the candidate and \$300 for the University, has been established by Warner-Lambert (Canada) Ltd., for award to a graduate in pharmacy, preferably of a Canadian University, who is candidate for the degree of Master of Science in Pharmacy. Apply: To the Secretary of the School of Graduate Studies by February 1.

The Novopharm Ltd. Graduate Award in Pharmacy

Novopharm Ltd. provides \$500 for a graduate student in the Faculty of Pharmacy with preference to a student in the general field of pharmaceuticals or biopharmaceuticals.

BURSARIES

(Note: Admission bursaries are listed above)

Ontario Student Assistance Programme

All students who are attending eligible post-secondary institutions in Ontario may qualify for assistance under this Program provided they satisfy the residence requirements as outlined in the Ontario Student Assistance brochure and demonstrate financial need. An award under this Program will be made to the extent of established need in a combination of a non-repayable grant and a Canada Student Loan.

Apply: Application forms and brochures for the 1977-78 Program will be available early in May, 1977. They may be obtained from the University of Toronto, Office of Student Awards, and all other post-secondary institutions. Applications should be submitted *in person* if possible.

Canada Student Loans Plan

Full details of this Plan are available in a brochure issued each spring by the Government of Canada. Basically the Plan is designed for those students who have resided in Canada for twelve months and demonstrate financial need, but who do not qualify for assistance under the Ontario Student Assistance Program. The application form for the Ontario Student Assistance Program is also used for the Canada Student Loans Plan.

Apply: Application forms and brochures are available from the University of Toronto, Office of Student Awards, and all other post-secondary institutions, and should be submitted to the institution which the student plans to attend.

Edwin H. Nelson Memorial Fund

The Edwin H. Nelson Memorial Fund, administered by the Ontario College of Pharmacists, was given by the late Mr. Lemuel W. Famulener to aid students of Canadian birth, of special ability and of high character to obtain an education.

Apply: To the Secretary of the Faculty before November 15.

Anna M. Pearson Memorial Bequest

The Anna M. Pearson Memorial Bursary Fund, administered by the Ontario College of Pharmacists, was established by the late Mr. Fred Pearson, to aid deserving undergraduates in pharmacy who have a good scholastic record.

Value: \$350.

Apply: To the Secretary of the Faculty before November 15.

Lambton Pharmacists' Bursary

The Lambton County Pharmacists' Association provides a bursary for a student from Lambton County entering Second Year, on the basis of financial need. The candidate will be selected by the directors of the Association upon receipt of an application.

Value: \$150.

Apply: To the Secretary of the Lambton County Pharmacists' Association.

Thunder Bay Pharmaceutical Association Bursary

The Thunder Bay Pharmaceutical Association provides a bursary for a student from Algoma, Kenora, Rainy River or Thunder Bay Districts. The award is made to a student who has successfully completed the First Year at Lakehead University or at the Faculty of Pharmacy, or at another university.

Value: \$200.

Apply: To the Secretary of the Faculty before November 15.

Ottawa-Carleton Ladies' Auxiliary Bursary

The Ladies' Auxiliary to the Ottawa-Carleton Pharmacists Association have established a bursary open to all students in the Faculty of Pharmacy who are: (a) Canadian citizens; (b) preferably from the Ottawa Valley area; (c) from other outlying areas of the province provided no one qualified under (b) above. Financial need must be demonstrated.

Value: \$200.

Apply: To the Secretary of the Faculty before November 15.

Atkinson Incurse Bursaries

Atkinson Incurse Bursaries, gift of the Atkinson Charitable Foundation, are awarded annually to students in the second or higher years of their courses. Applicants must have at least Second Class Honours in the final examinations of the preceding year, demonstrate financial need and be residents of the Province of Ontario.

Apply: To the Secretary of the Faculty before November 15.

Procter and Gamble Bursary Plan

The gift of the Procter and Gamble Company of Canada, these bursaries are awarded to students in all years. Applicants must have obtained at least Second Class Honours in the final examinations of the preceding year, and demonstrate financial need.

Apply: To the Secretary of the Faculty before November 15.

The Family Bursary Fund

This fund provides one or more bursaries to a total annual value of the income from a capital sum of \$20,000, for students registered in the Second or higher year of any degree course, provided they have financial need and satisfactory academic standing. Preference will be given to overseas students.

Apply: To the Secretary of the Faculty before November 15.

IBM Canada Bursary Program

The International Business Machines Company Limited has made available one or more bursaries of a total annual value of \$1,000 to students registered in any year of a full-time course in the University who have standing satisfactory to the Committee of Award and who demonstrate financial need.

Apply: To the Secretary of the Faculty before November 15.

Birks Family Foundation Bursaries

The Birks Family Foundation, Montreal, provides one or more bursaries of varying value, according to the funds available.

Apply: To the Secretary of the Faculty before November 15.

The S. Ubukata Fund for Japanese Students

The fund provides awards for Japanese subjects from Japan proper attending the University of Toronto. An applicant must satisfy admission requirements respecting English facility, must devote full time to his studies, and must not be holding other awards or financial aid from any other institution in this country or in Japan.

Apply: To the Office of Student Awards before June 1.

Khaki University and Y.M.C.A. Memorial Scholarships

This fund provides for two awards of approximately \$400 each, to students in the Second or higher year of any undergraduate course who obtained First Class Honours at the examinations of the previous year. Preference is given to sons and daughters of soldiers in World War I and of servicemen in the armed forces in World War II.

Apply: To the Secretary of the Faculty before November 15.

Patricia Hamilton Bursaries

Provided by the Estate of the late Patricia Hamilton of Port Hope. The value of the awards is variable, according to the annual interest available. To be awarded to students registered in any full-time degree or diploma course who indicate financial need. If two or more students present cases of equal merit and insufficient funds exist to assist them all, preference will be given to any student enrolled at Victoria College.

Apply: To the Secretary of the Faculty before November 15.

The Mabel Melissa Johnston Bursaries

Provided by a bequest of the late Mabel Melissa Johnston, one or more awards to a total value of approximately \$500 annually are available to students registered in any year of a full-time course who have a minimum of Second Class or B standing and who are in need of financial assistance. Application should be made on the University in-course award form submitted to the Secretary of the Faculty on or before November 15.

STUDENT LOANS

Certain funds for loans to students in the second and succeeding years are available in limited amounts through the generosity of the Canadian Foundation for the Advancement of Pharmacy, and the Ladies' Auxiliary to Toronto Pharmacists and the University of Toronto Alumni Association. Students in financial difficulty should consult the Dean concerning loans.

The University of Toronto Alumni Association Loan Fund

This fund comes from subscriptions received originally in 1919 and in succeeding years from graduates of the University and is administered by the University of Toronto Alumni Association.

Loans are available to undergraduate students enrolled in a full-time course at the University, in second and subsequent years. Funds are available for emergency purposes only.

Particulars may be obtained from the Secretary of the Loan Committee, Alumni House, 47 Willcocks Street, Toronto, Ontario M5S 1A1.

The Devonshire Loan Fund

The Devonshire loan fund has been established by Graduates of Devonshire House to assist students in the residence. Application should be made to the Office of the Dean of Devonshire House.

HOSPITAL PHARMACY RESIDENCY PROGRAMMES

The following accredited hospitals, in co-operation with the Faculty of Pharmacy, University of Toronto, provide Pharmacy Residency Programmes. Residency Certificates are awarded by the individual hospital on the recommendation of a joint Faculty-Hospital Residency Committee:—

Women's College Hospital
Toronto, Ontario

St. Joseph's Hospital
Hamilton, Ontario

Toronto General Hospital
Toronto, Ontario

Ottawa Civic Hospital
Ottawa, Ontario

St. Michael's Hospital
Toronto, Ontario

McMaster University Medical Centre
Hamilton, Ontario

Ottawa General Hospital
Ottawa, Ontario

Sunnybrook Medical Centre
Toronto, Ontario

Westminster Hospital
London, Ontario

University Hospital
London, Ontario

Victoria Hospital
London, Ontario

The purpose of the residency programmes is to train selected graduates in Pharmacy for leadership roles in administration and/or clinical practice in Hospital Pharmacy. Experience will be provided in the specialty areas of Hospital Pharmacy Practice including Drug Information Service, Patient Oriented (Clinical) Practice, Educational Activities, and in other areas of professional concern such as Drug Interactions, Intravenous Incompatibilities, and Investigational Drug Studies, as well as the problems and prerequisites of Hospital Pharmacy Administration.

IN-SERVICE TRAINING AND LICENCING AS A PHARMACIST

A degree in pharmacy does not in itself confer the right to practise pharmacy. To acquire this right, a university graduate in pharmacy must be licenced under the Pharmacy Act of the province in which he wishes to practise. In Ontario, the Pharmacy Part of the Health Disciplines Act is the pertinent legislation and is administered by the Ontario College of Pharmacists. This legislation and the regulations, specify, among other things, matriculation, academic and in-service training requirements for licencing as a pharmacist.

Persons who have graduated from the University of Toronto with the Degree of Bachelor of Science in Pharmacy may be licenced to practise as pharmacists in the province of Ontario when they have completed the necessary requirements and qualifications as set out in the regulations under the Health Disciplines Act.

Communications regarding in-service training, registration as a registered pharmacy student and licencing as a pharmacist in the province of Ontario should be addressed to: The Registrar, Ontario College of Pharmacists, 483 Huron Street, Toronto, Ontario M5R 2R4.

SUMMARY OF REGISTRATION

November 1, 1976

First Year	59	106	165
Second Year	54	109	163
Third Year	47	97	144
Fourth Year	45	97	142
	205	409	614
Special Students (part time)	16	32	48
	221	441	662

This publication is printed on paper which contains a proportion of recycled material.

The University of Toronto issues the following calendars and other publications concerning courses of instruction given by the University. Requests for calendars or information may be directed to the Office of Admissions of the University or to the Secretary of the particular Faculty, School or Institute.

ADMISSION INFORMATION—	Admission Awards Undergraduate Admission Handbook Undergraduate Admission Bulletin
APPLIED SCIENCE AND ENGINEERING—	Faculty of Applied Science and Engineering Engineering at Toronto—descriptive brochure
ARCHITECTURE—	Department of Architecture Department of Landscape Architecture Department of Urban and Regional Planning
ARTS AND SCIENCE—	Faculty of Arts and Science— St. George Campus (including Woodsworth College) Scarborough College Calendar Erindale College Calendar
CONTINUING EDUCATION—	The School of Continuing Studies
DENTISTRY—	Faculty of Dentistry Division of Postgraduate Dental Education
EDUCATION—	Faculty of Education Institute of Child Study—descriptive brochure Graduate Degrees in Education*
FORESTRY—	Faculty of Forestry
GRADUATE STUDIES—	School of Graduate Studies
LAW—	Faculty of Law
LIBRARY SCIENCE—	Faculty of Library Science
MANAGEMENT STUDIES—	Faculty of Management Studies
MEDICINE—	Faculty of Medicine, Medical Course Department of Rehabilitation Medicine Division of Postgraduate Medical Education
MUSIC—	Faculty of Music Royal Conservatory of Music Year Book
NURSING—	Faculty of Nursing
PHARMACY—	School of Pharmacy
PHYSICAL AND HEALTH EDUCATION—	School of Physical and Health Education
SOCIAL WORK—	Faculty of Social Work

*Write to: Ontario Institute for Studies in Education, 252 Bloor Street West, Toronto, Ontario, M5S 1V6.

